

49. (New) A method for manufacturing a semiconductor device comprising:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a crystallization promoting material;

introducing an argon ion into a selected portion of said semiconductor film; and

heating said semiconductor film to getter said crystallization promoting material into said selected portion of said semiconductor film.

50. (New) A method for manufacturing a semiconductor device comprising:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a crystallization promoting material;

introducing an argon ion into a selected portion of said semiconductor film; and

heating said semiconductor film to crystallize said semiconductor film using said crystallization promoting material

and to getter said crystallization promoting material into said selected portion of said semiconductor film.

51. (New) A method for manufacturing a semiconductor device comprising:

forming a semiconductor island comprising silicon over a substrate;

providing said semiconductor island with a crystallization promoting material;

introducing an argon ion into a selected portion of said semiconductor island; and

heating said semiconductor island to getter said crystallization promoting material into said selected portion of said semiconductor island.

52. (New) A method for manufacturing a semiconductor device comprising:

forming a semiconductor island comprising silicon over a substrate;

providing said semiconductor island with a crystallization promoting material;

introducing an argon ion into a selected portion of said semiconductor island; and

heating said semiconductor island to crystallize said semiconductor island using said crystallization promoting material and to getter said crystallization promoting material into said selected portion of said semiconductor island.

53. (New) A method for manufacturing a semiconductor device comprising:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a crystallization promoting material;

introducing an argon ion into a selected portion of said semiconductor film using a mask provided over said semiconductor film;

heating said semiconductor film to getter said crystallization promoting material into said selected portion of said semiconductor film; and

etching said selected portion of said semiconductor film after said heating to form an active layer of the semiconductor device.

54. (New) A method for manufacturing a semiconductor device comprising:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a crystallization promoting material;

introducing an argon ion into a selected portion of said semiconductor film using a mask provided over said semiconductor film;

heating said semiconductor film to crystallize said semiconductor film using said crystallization promoting material and to getter said crystallization promoting material into said selected portion of said semiconductor film; and

etching said selected portion of said semiconductor film after said heating to form an active layer of the semiconductor device.

55. (New) A method for manufacturing a semiconductor device comprising:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a crystallization promoting material;

introducing an argon ion into a selected portion of said semiconductor film using a first mask provided over said semiconductor film;

heating said semiconductor film to getter said crystallization promoting material into said selected portion of said semiconductor film;

forming a second mask over said semiconductor film; and
etching said selected portion of said semiconductor film using said second mask after said heating to form an active layer of the semiconductor device.

56. (New) A method for manufacturing a semiconductor device comprising:

forming a semiconductor film comprising silicon over a substrate;

providing said semiconductor film with a crystallization promoting material;

introducing an argon ion into a selected portion of said semiconductor film using a first mask provided over said semiconductor film;

heating said semiconductor film to crystallize said semiconductor film using said crystallization promoting material

and to getter said crystallization promoting material into said selected portion of said semiconductor film;

forming a second mask over said semiconductor film; and
etching said selected portion of said semiconductor film using said second mask after said heating to form an active layer of the semiconductor device.

57. (New) The method of claim 49 wherein said crystallization promoting material comprises an element selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

58. (New) The method of claim 50 wherein said crystallization promoting material comprises an element selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

59. (New) The method of claim 51 wherein said crystallization promoting material comprises an element selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

60. (New) The method of claim 52 wherein said crystallization promoting material comprises an element selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

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61. (New) The method of claim 53 wherein said crystallization promoting material comprises an element selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

62. (New) The method of claim 54 wherein said crystallization promoting material comprises an element selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

63. (New) The method of claim 55 wherein said crystallization promoting material comprises an element selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

64. (New) The method of claim 56 wherein said crystallization promoting material comprises an element selected

from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu and Au.

65. (New) The method of claim 49 further comprising the step of etching said selected portion of said semiconductor film.

66. (New) The method of claim 50 further comprising the step of etching said selected portion of said semiconductor film.

67. (New) The method of claim 51 further comprising the step of etching said selected portion of said semiconductor island.

68. (New) The method of claim 52 further comprising the step of etching said selected portion of said semiconductor island.

69. (New) The method of claim 53 wherein said semiconductor film is formed into a semiconductor island.

70. (New) The method of claim 54 wherein said semiconductor film is formed into a semiconductor island.

71. (New) The method of claim 55 wherein said semiconductor film is formed into a semiconductor island.

72. (New) The method of claim 56 wherein said semiconductor film is formed into a semiconductor island.

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73. (New) The method of claim 49 wherein said semiconductor film comprises an amorphous silicon.

74. (New) The method of claim 50 wherein said semiconductor film comprises an amorphous silicon.

75. (New) The method of claim 51 wherein said semiconductor island comprises an amorphous silicon.

76. (New) The method of claim 52 wherein said semiconductor island comprises an amorphous silicon.

77. (New) The method of claim 53 wherein said semiconductor film comprises an amorphous silicon.

78. (New) The method of claim 54 wherein said semiconductor film comprises an amorphous silicon.

79. (New) The method of claim 55 wherein said semiconductor film comprises an amorphous silicon.

80. (New) The method of claim 56 wherein said semiconductor film comprises an amorphous silicon.

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81. (New) The method of claim 49 wherein said heating is conducted at a temperature of 450 to 700 °C.

82. (New) The method of claim 50 wherein said heating is conducted at a temperature of 450 to 700 °C.

83. (New) The method of claim 51 wherein said heating is conducted at a temperature of 450 to 700 °C.

84. (New) The method of claim 52 wherein said heating is conducted at a temperature of 450 to 700 °C.

85. (New) The method of claim 53 wherein said heating is conducted at a temperature of 450 to 700 °C.

86. (New) The method of claim 54 wherein said heating is conducted at a temperature of 450 to 700 °C.

87. (New) The method of claim 55 wherein said heating is conducted at a temperature of 450 to 700 °C.

88. (New) The method of claim 56 wherein said heating is conducted at a temperature of 450 to 700 °C.

89. (New) The method of claim 49 wherein said heating is conducted at a temperature of 800 to 1100 °C.

90. (New) The method of claim 50 wherein said heating is conducted at a temperature of 800 to 1100 °C.

91. (New) The method of claim 51 wherein said heating is conducted at a temperature of 800 to 1100 °C.

92. (New) The method of claim 52 wherein said heating is conducted at a temperature of 800 to 1100 °C.

93. (New) The method of claim 53 wherein said heating is conducted at a temperature of 800 to 1100 °C.